



REDUCTION IN TOTAL OWNERSHIP COST

(R-TOC 101)

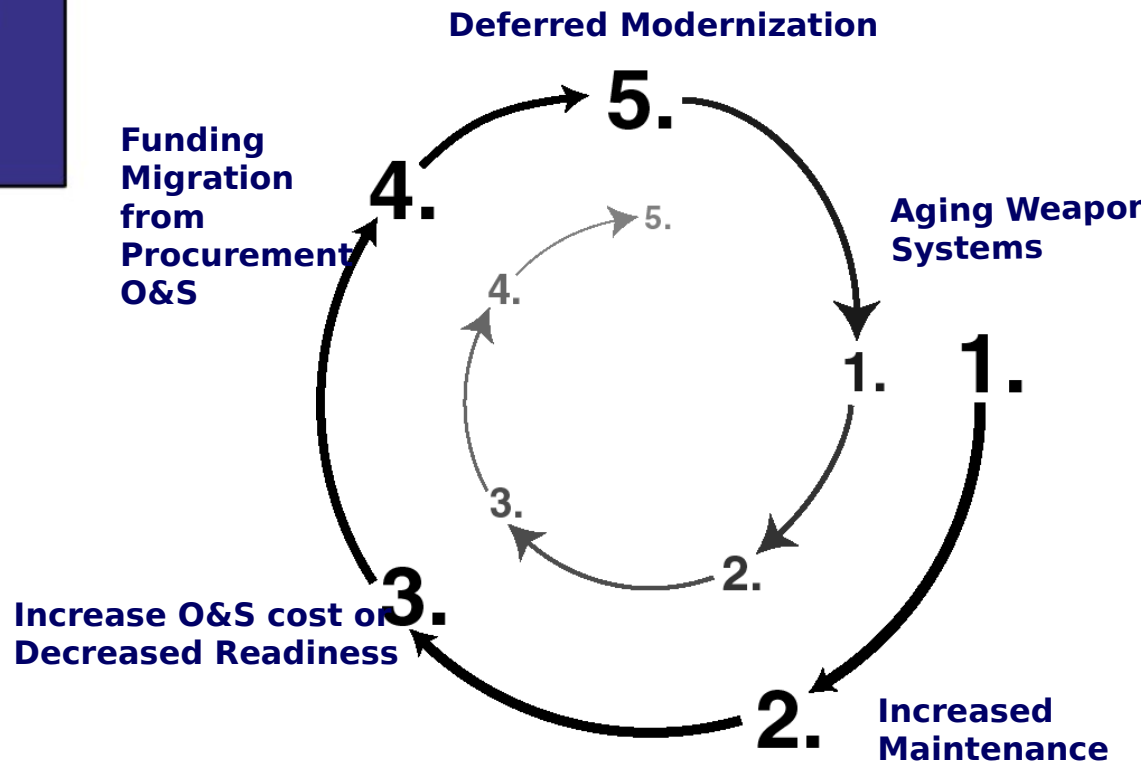
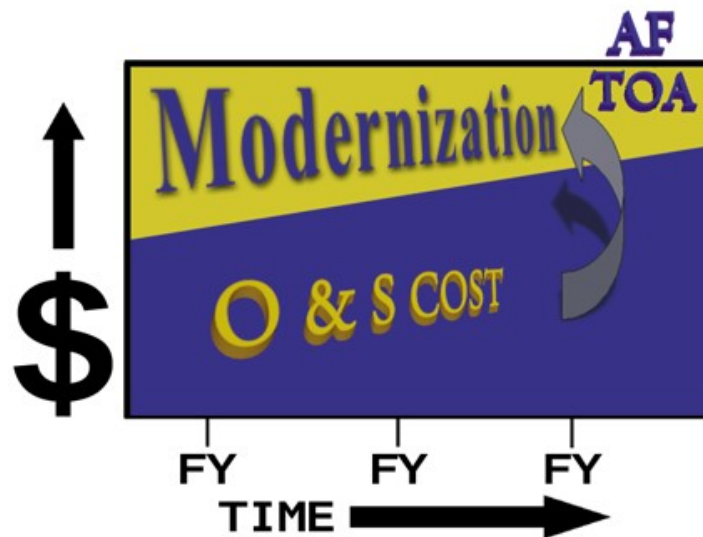


R-TOC OVERVIEW

- **Background**
 - TOC Definitions
- **Air Force R-TOC Overview**
 - Three dimensional approach
- **Frequently Asked Questions**
 - What is CAIV - How does it relate to R-TOC?
 - What is the difference between TOC and LCC?
 - What is the difference between savings vs.cost avoidance?



BACKGROUND WHY R-TOC ?





DR. GANSLER'S TASKING

At Dec 97 DSAC Meeting, Dr. Gansler :
“...setting ambitious top level goals for TOC reduction, responsibilities and accountability to achieve them”

January '98 DSAC Executive Meeting, SAEs directed:

“Establish aggressive, time phased, TOC reduction goals for major programs (new, in production, mods, and fielded) within six months.”

- Designate a minimum of five pilot programs
- Present TOC reduction initiatives NIT 13



BACKGROUND DOD TOC DEFINED

DoD TOC is comprised of:

- Costs to research, develop, acquire, own, operate, train, and dispose of weapon and support systems, other equipment and real property
- Costs to recruit, train, retain, separate and otherwise support military and civilian personnel, and all other costs of business operations of the DoD.

SOURCE: USD(A&T) Memorandum, "Definition of Total Ownership Cost (TOC), Life Cycle Cost (LCC), and the Responsibilities of Program



Air Force R-TOC Program

Three Main Objectives

1. Cost Control

2. Cost Reduction

**3. Modernization
Investment**

*Must be focus of every
mission!*

- *Operator/Sustainer*
- *Acquirer (Development & Logistics)*
- *Industry*



**REDUCING TOTAL OWNERSHIP COST WHILE MEETING THE
WARFIGHTER'S NEEDS**



3 DIMENSIONS OF OWNERSHIP COST

**DEFENSE SYSTEM
PERFORMANCE &
DESIGN**

DIMENSION 1: Program Thru

*RDT&E Procurement, Spares,
POL, Modifications, Disposal*

DIMENSION 2: Infrastructure Th

**RESOURCES TO
OPERATE**

*BOS, Transportation,
Depot, Infrastructure,
Support/Munitions
Systems*

**DIMENSION 3:
Concepts Thrust**

**OPERATIONAL
CONCEPTS**

*Logistics Cycle Time,
Doctrine, Force Structure,
Logistics Footprint*



DIMENSION 1

DIMENSION 1: Program Thrust

DEFENSE SYSTEM PERFORMANCE & DESIGN

*RDT&E Procurement, Spares,
POL, Modifications, Disposal*

- Acquisition Reform
- Lightning
- Costs/Acquisition Streamlining
- CAIV
- Open Systems
- Contractor Logistic Support
- COTS
- SPI: Single Process Initiative

DIMENSION 2: Infrastructure Thrust

RESOURCES TO OPERATE

*BOS, Transportation,
Depot, Infrastructure,
Support/Munitions
Systems*

DIMENSION 3: Concepts Thrust

OPERATIONAL CONCEPTS

*Logistics Cycle Time,
Doctrine, Force Structure,
Logistics Footprint*



DIMENSION 1: DEFENSE SYSTEMS PROGRAM THRUST

- Pilot Programs Test Initiatives In:
 - A Variety of Different Life Cycle Stages
 - Space Based, Missiles & Aircraft Systems
 - Cost Tools, Metrics & Investment Strategies



Dimension 1: R-TOC Pilot Programs

- B-1*
- KC-135*
- F-16*
- SBIRS
- F-117
- AWACS
- Cheyenne Mountain
- JSTARS
- C-17
- C-5*

- 1. REDUCTION GOALS SET**
- 2. IMPLEMENTATION PLANS IN PLACE**
- 3. MEASURING RESULTS**

*** Section 816 - Congressionally Reported**



LESSONS LEARNED

- Significant Cost Reduction Requires Change
- Change Requires Top Management Commitment and a Sense of Urgency
 - PM or Deputy Has to Be Involved!
- Newer Systems and High Cost Systems Present the Most Opportunity for Cost Reduction
 - But Opportunities Abound If You Attack Cost Aggressively
- A TOC Single Point of Contact Is Necessary
 - One Per Program Office As a Trusted Advisor to the PM



DIMENSION 2

- ABC
- Serviced Based Management
- MEO
- Competitive Sourcing / Privatization

DIMENSION 1: Program Thrust

**DEFENSE SYSTEM
PERFORMANCE &
DESIGN**

*RDT&E Procurement, Spares,
POL, Modifications, Disposal*

DIMENSION 2: Infrastructure Thrust

**RESOURCES TO
OPERATE**

*BOS, Transportation,
Depot, Infrastructure,
Support/Munitions
Systems*

DIMENSION 3: Concepts Thrust

**OPERATIONAL
CONCEPTS**

*Logistics Cycle Time,
Doctrine, Force Structure,
Logistics Footprint*



DIMENSION 2: INFRASTRUCTURE THRUST RESOURCES TO OPERATE

Installation Pilots

- Examine the Infrastructure Cost to Support Weapon Systems
- Includes Areas Such As Medical, Security, Base Operations



DIMENSION 2 R-TOC INSTALLATION PILOTS

- ACC Initiative to Reduce Costs Throughout Command
 - Holloman AFB
 - Ellsworth AFB
 - Seymour-Johnson AFB
 - Mountain-Home AFB
 - Nellis AFB



DIMENSION 2 INSTALLATION PILOT PROGRAM

- **Strategy**

- Work With MAJCOMs to Identify Pilot Installations
- Use Pilot Installations to Establish Cost Reduction Initiatives and Derive Lessons Learned
- Use Lessons Learned From the Pilots to Institutionalize Dimension 2 R-TOC



DIMENSION 3

DIMENSION 1: Program Thrust

**DEFENSE SYSTEM
PERFORMANCE &
DESIGN**

*RDT&E Procurement, Spares,
POL, Modifications, Disposal*

DIMENSION 2: Infrastructure Thrust

**RESOURCES TO
OPERATE**

*BOS, Transportation,
Depot, Infrastructure,
Support/Munitions
Systems*

DIMENSION 3: Concepts Thrust

**OPERATIONAL
CONCEPTS**

*Logistics Cycle Time,
Doctrine, Force Structure,
Logistics Footprint*

- AEF
- Process Improvement
- Enterprise Integration



DIMENSION 3 OPERATIONAL CONCEPTS THRUSTS

- Evaluates Costs Attributable to the Ways We Do Business
- Logistics Transformation
 - Support of EAF/AEF
- Operationalize R-TOC
 - Establish a Link Between Costs and Operational Value



FREQUENTLY ASKED QUESTIONS

- Cost As An Independent Variable (CAIV)
- Total Ownership Cost (TOC) Vs Life Cycle Cost (LCC) .?
- Savings Vs Cost Avoidance





CAIV

- What is CAIV?
- How does it relate to R-TOC?





CAIV DEFINED



Cost as an Independent Variable (CAIV) is "The process of using better business practices, allowing trade space for industry to meet user requirements, and considering operations and maintenance costs early in requirements definition in order to procure systems smarter and more efficiently."

Source: Air Force Instruction (AFI) 10-601, dated 1 October 1998



CAIV IS . . .

- CAIV Is a Strategy That
 - Entails Setting Aggressive, Yet Realistic Cost Objectives When Defining Operational Requirements
 - Managing Achievement of These Objectives.
- Cost Objectives Must Balance Mission Needs With Projected Out-year Resources
- CAIV Principles Are Applicable Throughout a System's Life Cycle.





CAIV PRINCIPLES/TENETS



USER NEEDS / R-

CAIV-Based Decisions

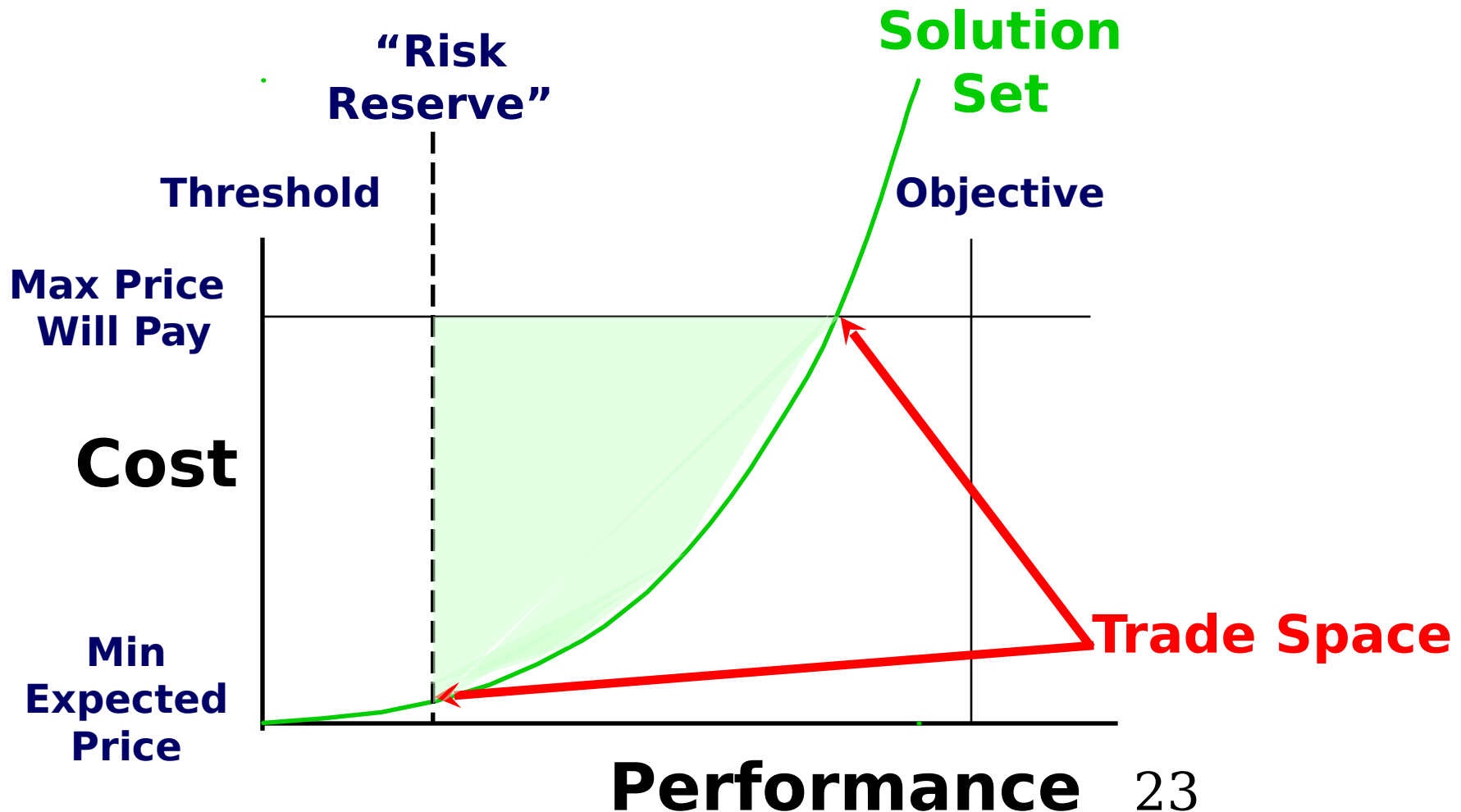
**Cost/Schedule/Performance/Risk
TRADE SPACE**

Capability-Based Requirements Partnering TOC/LCC Focus Risk-Based Management Metrics



TRADE SPACE

The Capstone Tenet





R-TOC and CAIV

R-TOC →

**Cost
Baseline:
DoD TOC**

- *Active and continuous* search to identify/implement TOC reduction opportunities throughout the Air Force

CAIV →

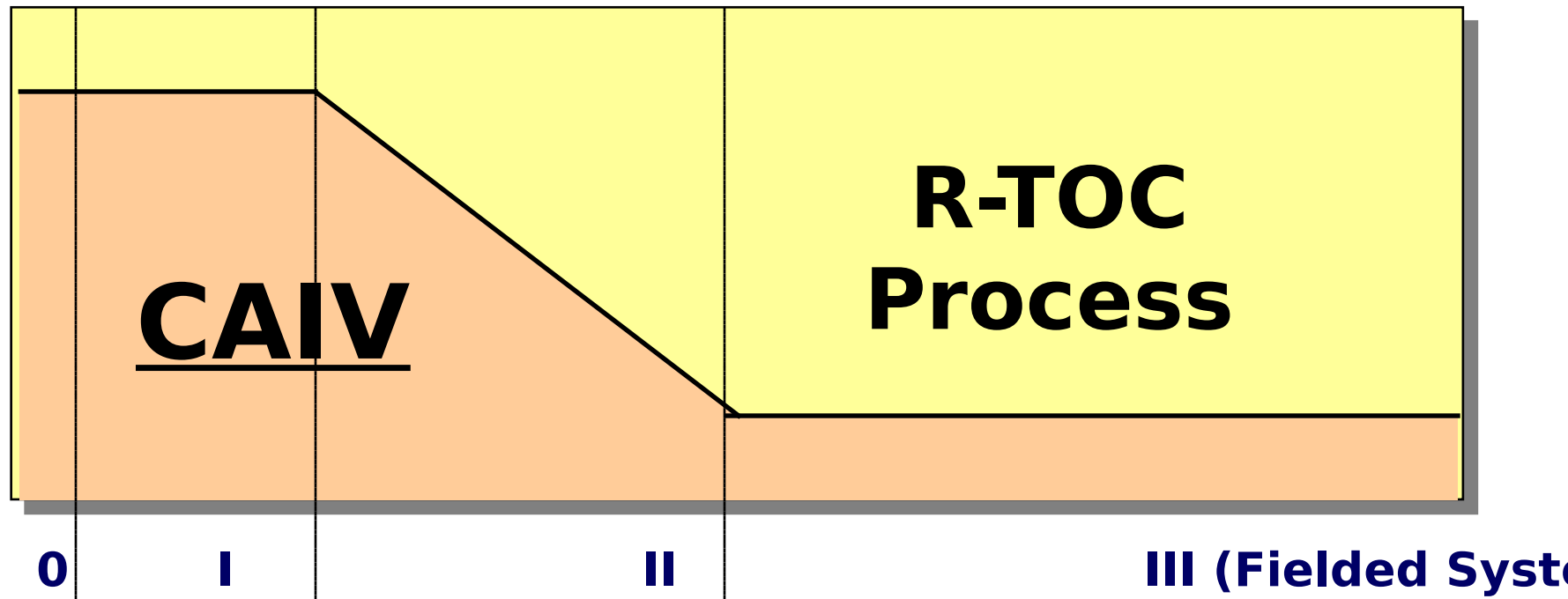
**Cost Baseline:
Def Sys TOC
(LCC)**

- LCC Cost-Performance trade-off process to **establish and meet R-TOC objectives**
 - Implementation of R-TOC in the Acquisition process of developing / buying weapon systems



R-TOC AND CAIV

R-TOC Dimension 1 - Defense Systems



Program Phase



WHAT IS THE DIFFERENCE BETWEEN LCC & TOC

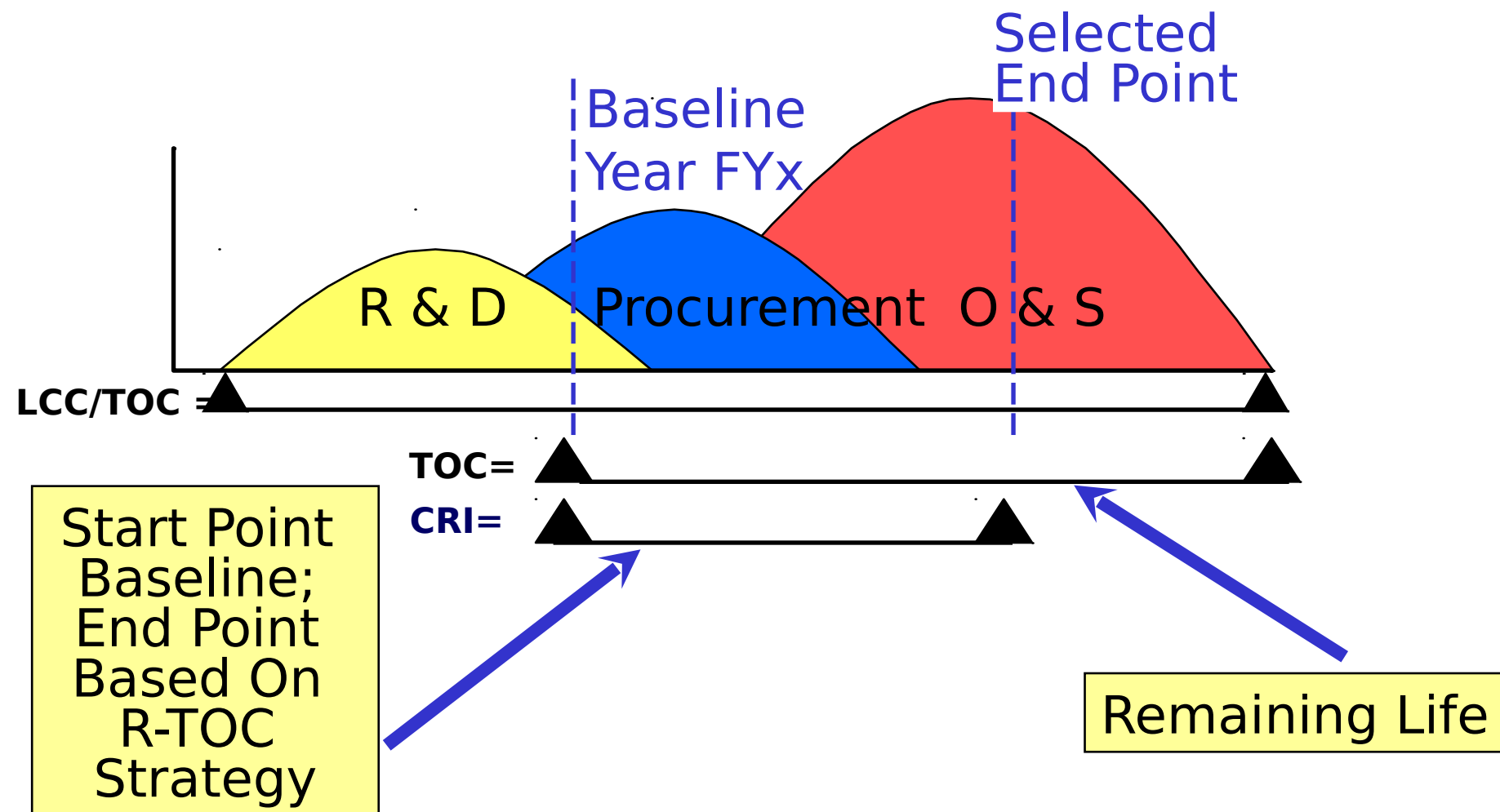
- Defense Systems TOC Is Life Cycle Cost (LCC) (As Defined in Dod 5000.4-M).
- LCC
 - Includes Not Only Acquisition Program Direct Costs, but Also Indirect Costs Attributable to the Acquisition Program (I.E., Costs That Would Not Occur If the Program Did Not Exist).
 - For Example, Indirect Costs Would Include the Infrastructure That Plans, Manages and Executes a Program Over Its Full Life and Common Support Items and Systems.

SOURCE: USD(A&T) Memorandum, "Definition of Total Ownership Cost (TOC), Life Cycle Cost (LCC), and the Responsibilities of Program



WHAT IS THE DIFFERENCE BETWEEN LCC & TOC

However, as systems progress through the life cycle





COST SAVINGS VS COST AVOIDANCE

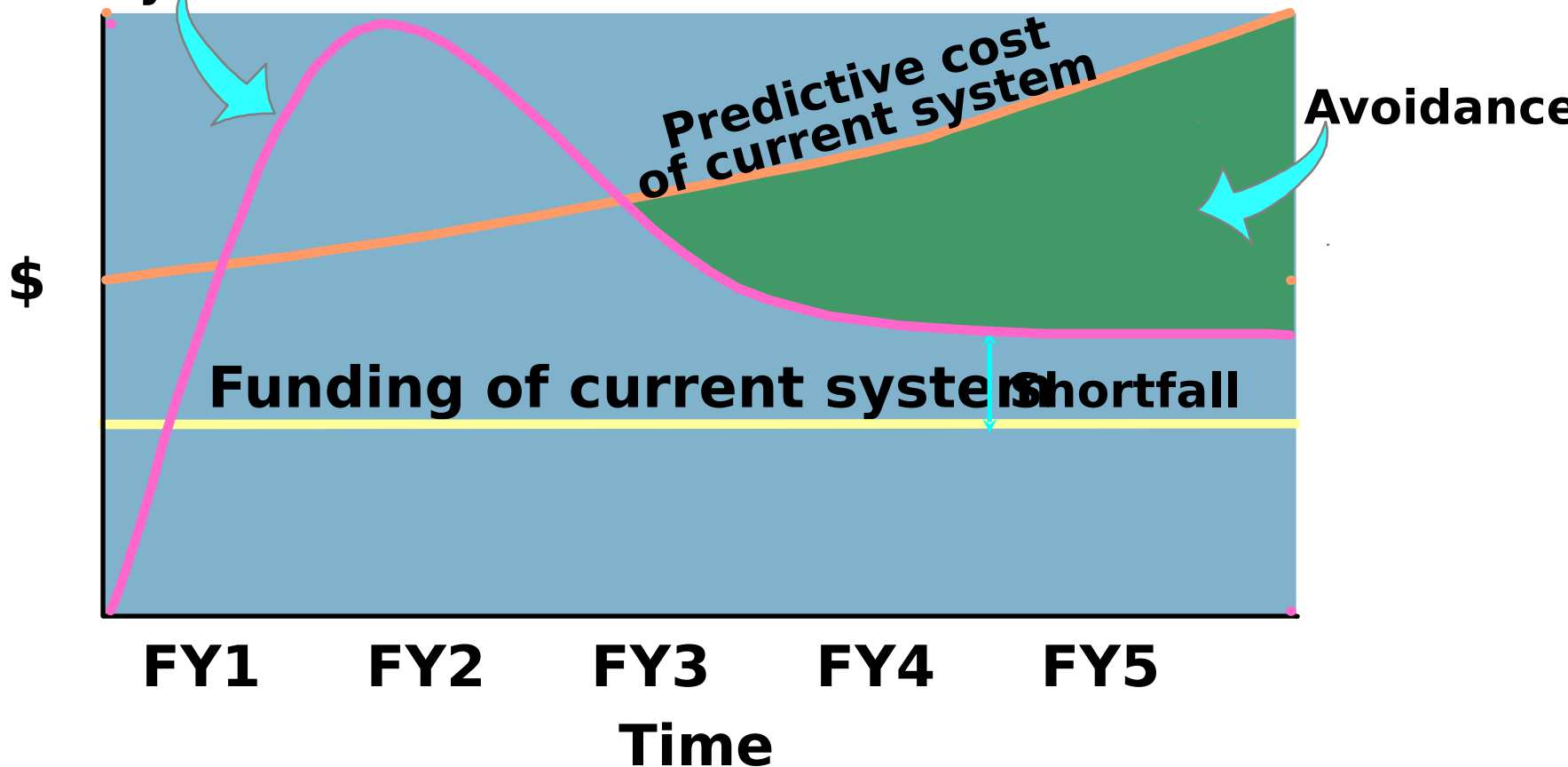
WHAT'S THE DIFFERENCE?



QUESTION: WHAT IS THE DIFFERENCE BETWEEN COST AVOIDANCE & COST SAVINGS

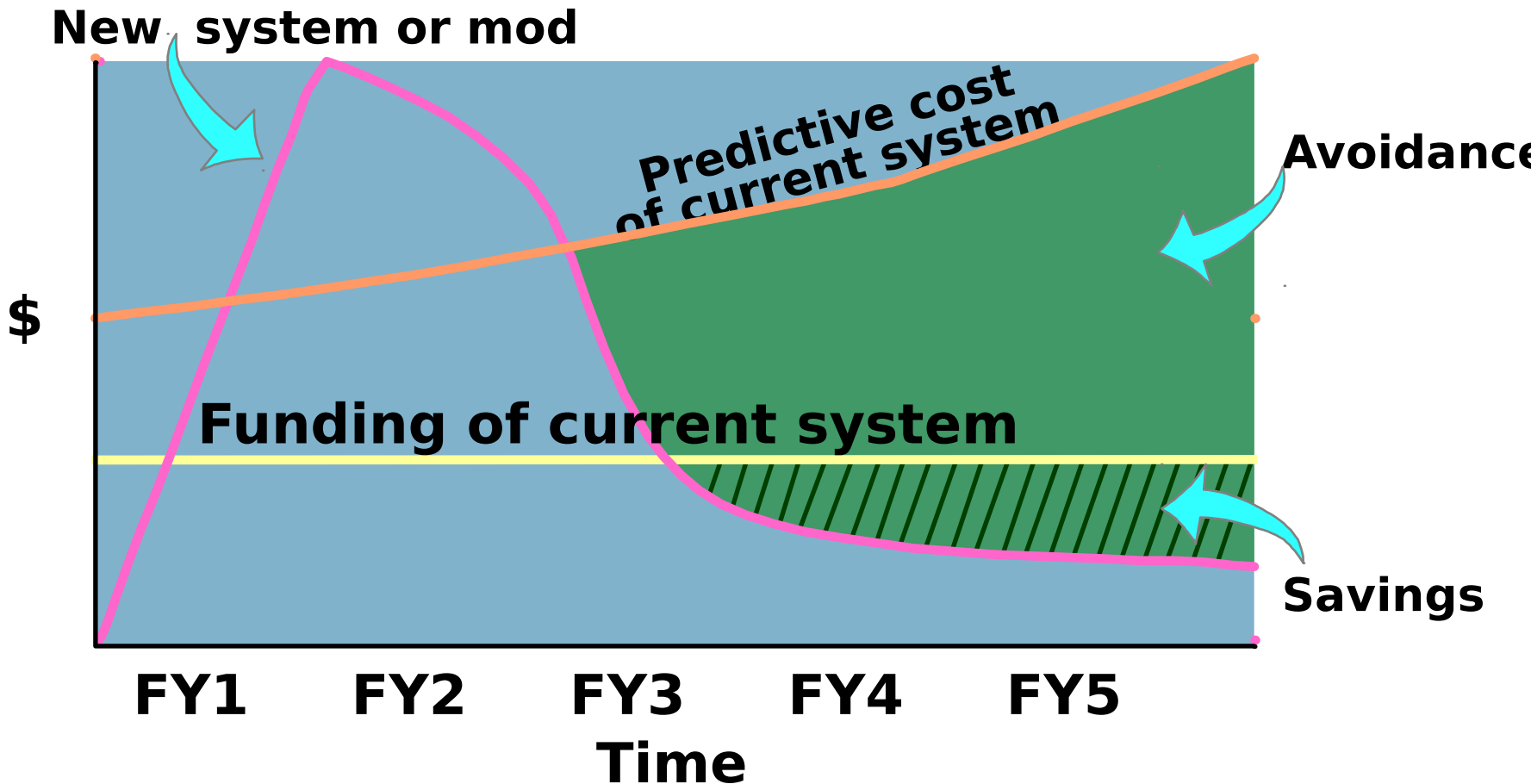
ANSWER:

New system or mod





COST AVOIDANCE VS COST SAVINGS



$$\text{ROI} = \text{Savings} / \text{Investments NOT Avoidance} / \text{Investment}$$



COST AVOIDANCE VS COST SAVINGS

- Cost Avoidance
 - Based on Projected Cost
- Cost Savings
 - Programmed Resources
 - Within FYDP



Business Case Analysis

- A BCA is:
 - A Communications Tool
- A BCA is NOT:
 - An Economic Analysis (EA)
 - A replacement for an EA



Business Case Analysis

- Method of Documenting Economic Value of Investments
 - Baselines Current Support Costs
 - Documents
 - ⇒ Implementation Plan
 - ⇒ Investment
 - ⇒ Savings
 - ⇒ Risk Assessment
 - Calculates
 - ⇒ NPV, SIR (ROI), RADR,



BCA Package Content

- **BCA Plan** —————→ Word Document
 - **Weapon System Baseline**
 - **Comb Chart**
- Weapon System
Baseline Template
-
- **Initiative Overview**
 - **Initiative Baseline**
 - **Savings Profile**
 - **Avoidance Profile**
 - **Projected Baseline**
 - **Summary Profile**
 - **DSAC II Format**
- Business Case
Analysis Template
-
- » **RAPIDS Chart**
- Submitted by MAJCOM

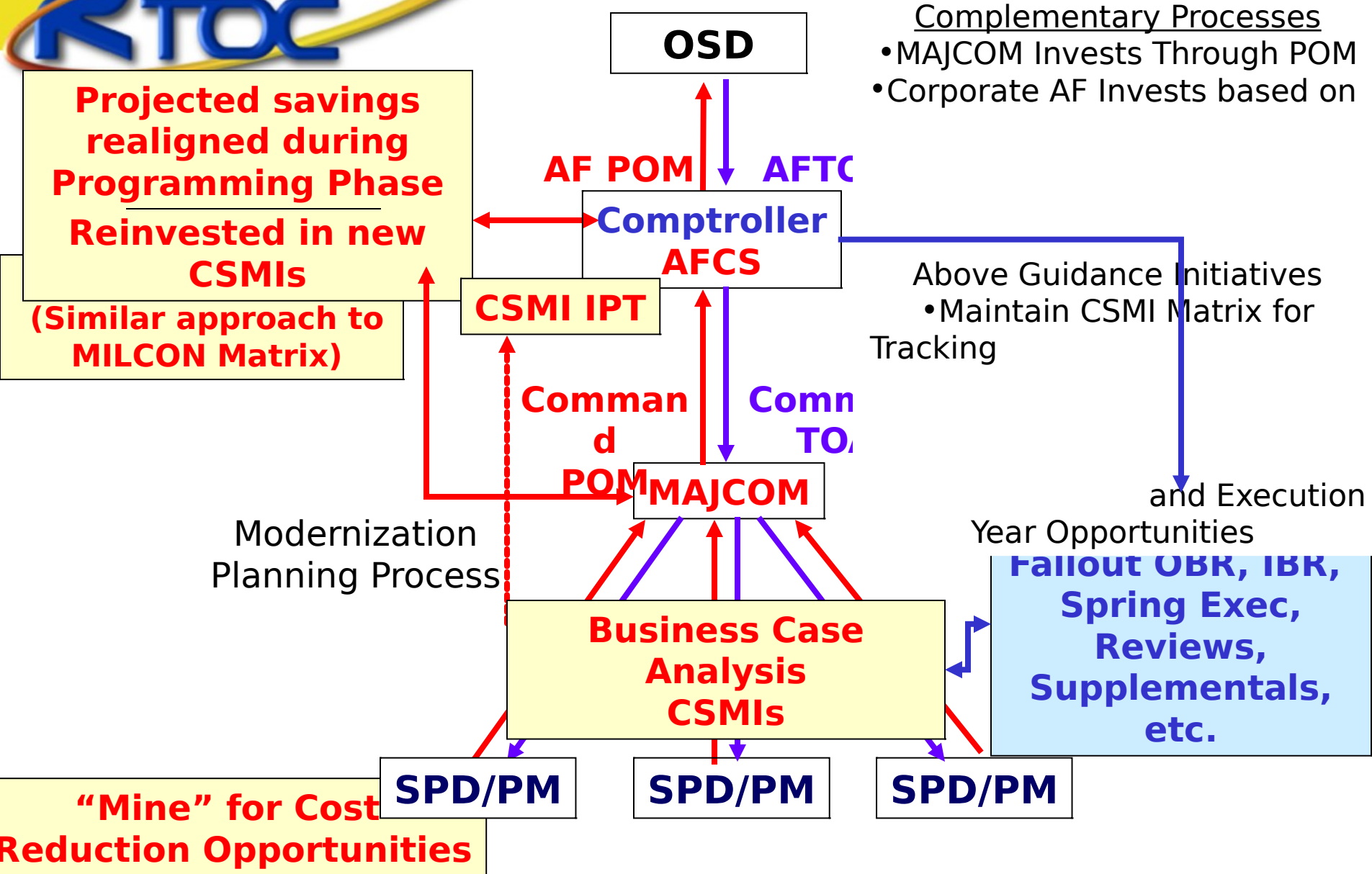


Cost Savings Modernization Initiatives (CSMI)

- A Process to Obtain Funding for Cost Reduction Initiatives
 - POM/APOM Submission
 - ⇒MAJCOM Approval
 - CCN Assigned
 - Savings in FYDP
- BCA Required
- USAF CRIPT (SAF & HQ USAF)
 - Supports Corporate Structure



CSMI Investment





CONTACT INFORMATION

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QUESTIONS?



**BOTTOM LINE: REDUCING TOTAL OWNERSHIP
COST WHILE MEETING THE WARFIGHTERS NEEDS**

BACKUPS



Section 816

Language

- Pilot Programs for Testing Program Manager Performance of Product Support Oversight Responsibilities for Life Cycle of Acquisition Programs.
- 816 (A) DESIGNATION OF PILOT PROGRAMS- The Secretary of Defense, Acting Through the Secretaries of the Military Departments, Shall Designate 10 Acquisition Programs of the Military Departments As Pilot Programs on Program Manager Responsibility for Product Support.
- 816 (C) REPORT- Not Later Than February 1, 1999, the Secretary of Defense Shall Submit to the Congressional Defense Committees a Report on the Pilot Programs.

OTHER PILOT PROGRAM ACTIVITY

CAIV FLAGSHIPS

JSF JASSM
EELV SBIRS

DSAC
"PILOTS"

CORONA
"JUMP
START"

- | | |
|-------------|-----------|
| 1. F-16 | 7. C-17 |
| 2. F-117 | 8. CMC |
| 3. C/KC-135 | 9. JSTARS |
| 4. SBIRS | |
| 10. NGSL | |
| 5. B-1 | 11. |
| AWACS | |
| 6. AMRAAM | |

- | |
|----------|
| 2. F-117 |
| 3. B-1 |
| 4. C-5 |

1. Fielded Systems

2. Significant O&S

3. Opportunity for Savings/ Reinvest

Objective / Criteria

1. Major Programs

2. Variety of Programs-
Space, Air Vehicle

3. Minimum of Five

SECTION 912 (FY98)
PM OVERSIGHT OF
LIFE CYCLE
SUPPORT (PMOLCS)

- | | |
|----------|-----------------|
| 1. F-16 | 6. KC-135 |
| 2. SBIRS | 7. Cheyenne Mtn |
| 3. B-1 | 8. AWACS |
| 4. C-5 | 9. JSTARS |
| 5. F-117 | 10. C-17 |

1. Fielded Systems

2. Significant O&S

3. Specific Management
Actions Required

4. Ten from Each Service

SECTION 816 (FY 99)

- | | |
|----------------|--------------------|
| 1. APACHE | 6. AFATDS |
| 2. F-16 | 7. C/KC-135 |
| 3. AV SP EQ | 8. C-5 |
| 4. B-1 | 9. H-60 |
| 5. M109 | 10. M-1 ABRAMS |

1. Specific
Management
Actions Required

2. Ten from DoD



R-TOC PROGRAM SUMMARY

- **Dimension 1 Program:**
10 Pilot Programs on Track
Deploying AF Wide - 02 APPG
- **Dimension 2 Infra Structure:**
Infrastructure Dimension Underway
Five ACC Pilots Identified
- **Dimension 3 Operational Concepts:**
Cost of Readiness
Metrics

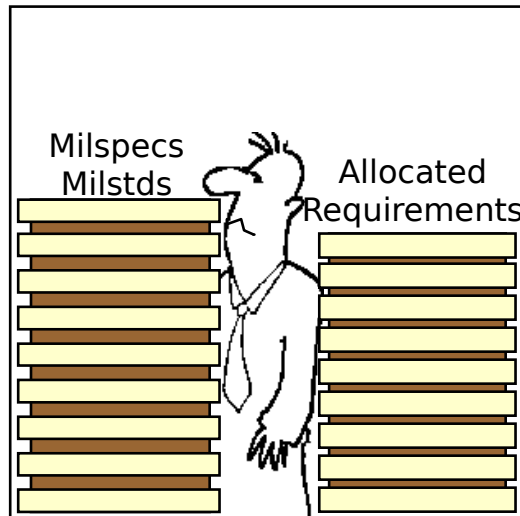


TENET: CAPABILITY-BASED REQUIREMENTS

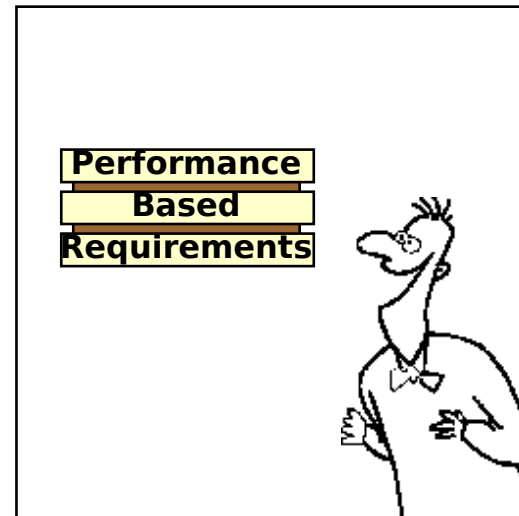
Trade Space

**Output-oriented
vs.**

"How to" solutions



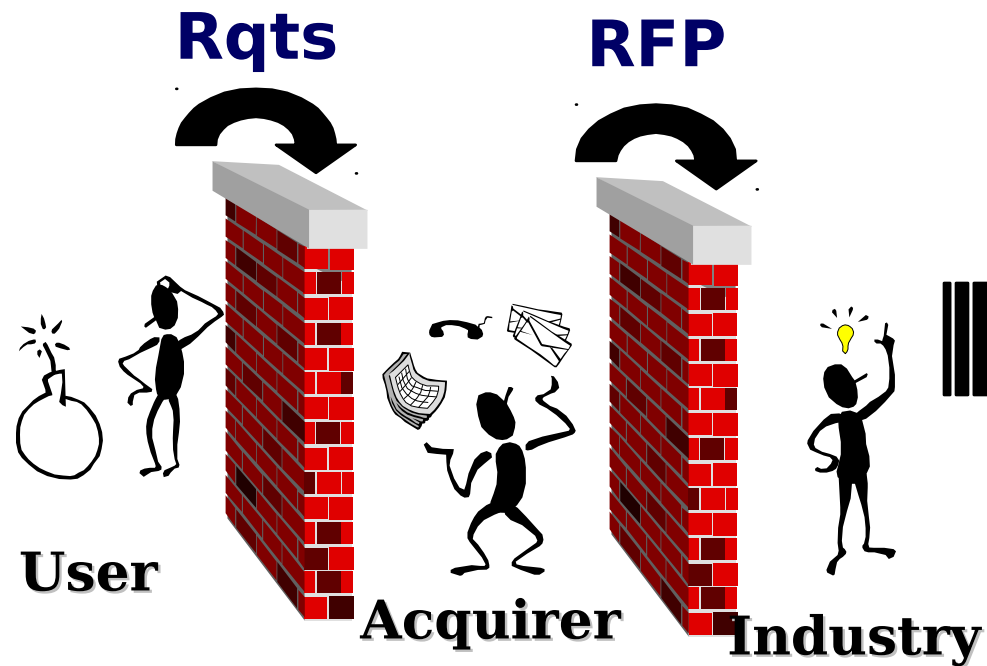
OLD



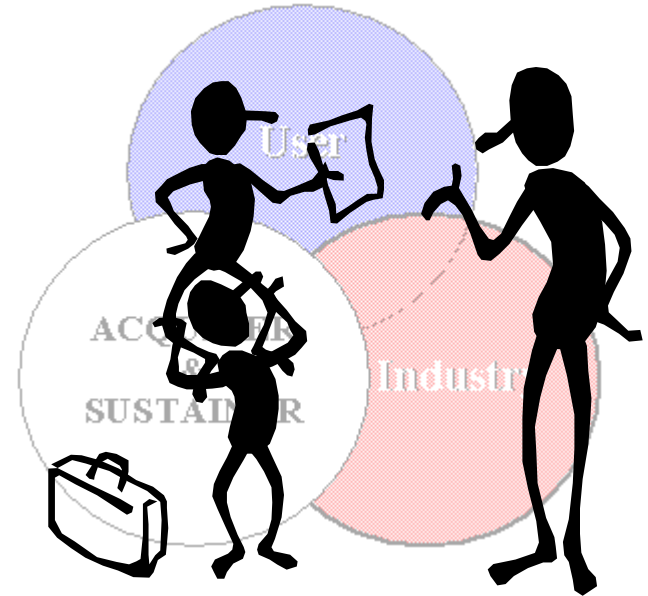
NEW



TENET: PARTNERING



PAST



TODAY

Partnered Management of Trade Space



TENET: TOC/LCC FOCUS

Old

NEW CARS

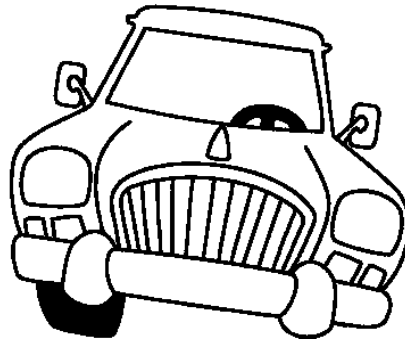
GOOD DEAL !!



AI's GARAGE

OH No!!!

Repair Bill \$\$\$\$



- OLD: LCC Analysis on the Shelf

New

NEW CARS

WHAT WILL IT COST TO MAINTAIN?



AI's GARAGE

GREAT DEAL !!

WAIT !! COME BACK !!



- NEW: TOC is on the PM's Report Card



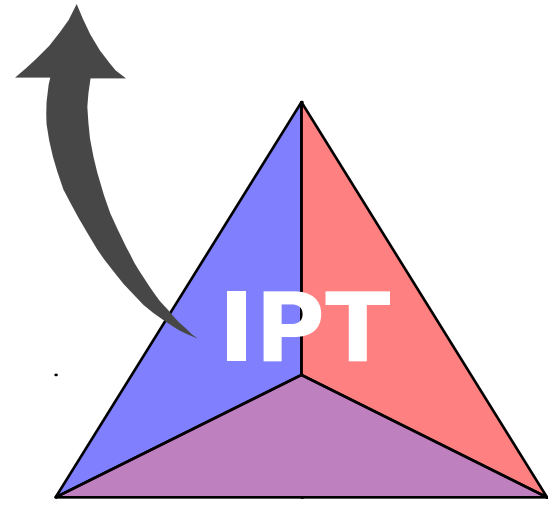
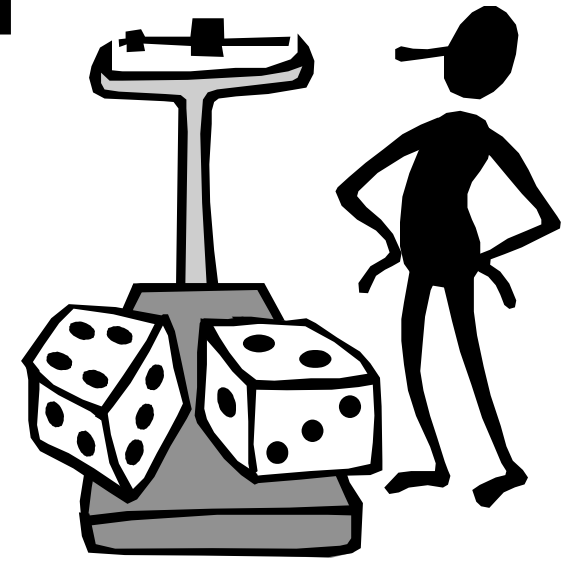
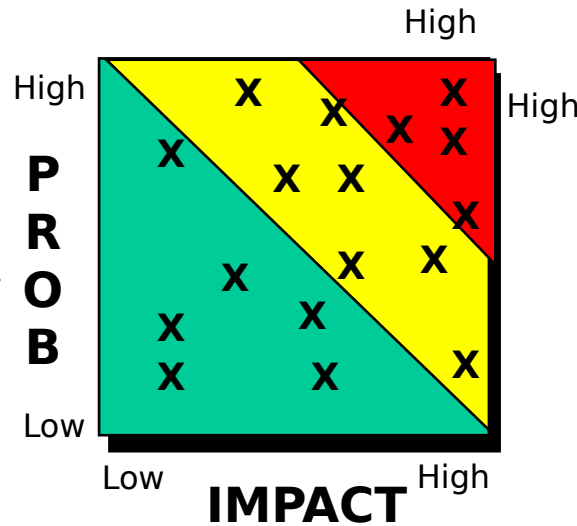
TENET: RISK-BASED MANAGEMENT

X

RQMT	RISK	IMPACT	PROB	RATING
Technical Risks				

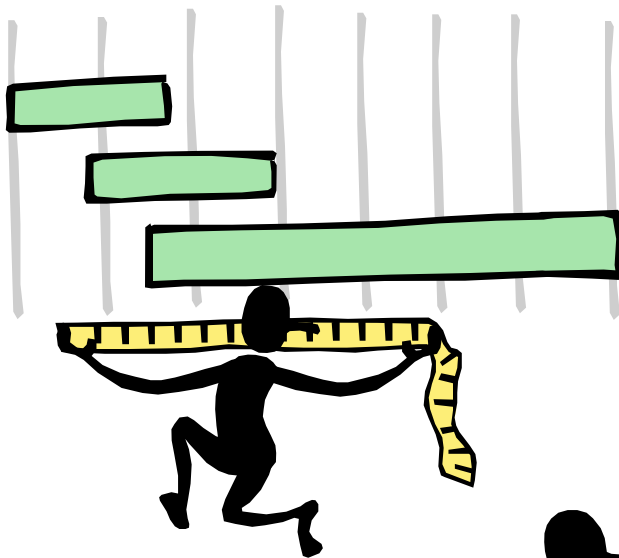
Programmatic Risks				

Business Risks				

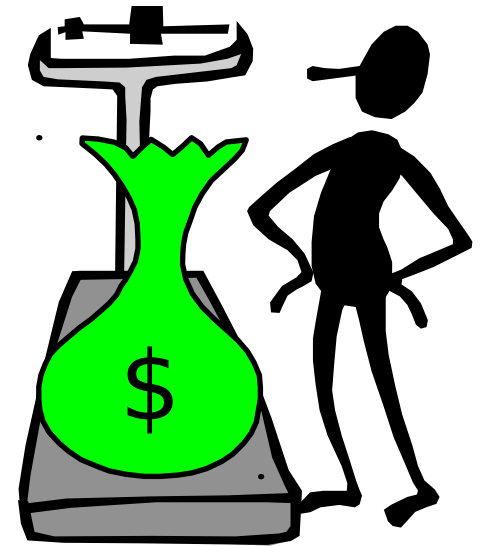




TENET: METRICS



SCHEDULE



COST





WHAT IS THE DIFFERENCE BETWEEN LCC & TOC

For Defense Systems, Initially

